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The Equation, Fall 2003

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Biochemistry and
Molecular Biology

Biological Sciences

Chemistry

Geological Sciences

Mathematics and
Statistics

Anatomy and Physiology

Physics

Psychology

$$f(\underline{x}) = \frac{\exp[-(\underline{x}-\underline{\mu})'\Sigma^{-1}(\underline{x}-\underline{\mu})/2]}{(2\pi)^{p/2}|\Sigma|^{1/2}}$$ the EQUATION THE WRIGHT STATE UNIVERSITY COLLEGE OF SCIENCE AND MATHEMATICS NEWSLETTER

VOLUME I, #1 2003



Introducing the New Dean of the College of Science and Mathematics, Dr. Michele Wheatly

Dr. Michele Wheatly, professor of biological sciences, was named dean of the College of Science and Mathematics (CoSM) on July 1, 2002.

Born and educated in the United Kingdom, Dr. Wheatly is internationally known for her research in comparative physiology and in 1988 was the recipient of the prestigious Presidential Medal from the Society for Experimental Biology. Dr. Wheatly earned her undergraduate degree in biological sciences and a doctorate in comparative physiology from Birmingham University, United Kingdom. She performed postdoctoral work at the University of Calgary, Canada and subsequently served 10 years on the faculty in the zoology department at the University of Florida, where she was promoted to full professor.

Dr. Wheatly maintains an active research program focusing on the regulation of expression of gene coding for calcium transporting proteins, using the molting cycle of freshwater crayfish as a model system. Her research has been continuously funded by National Science Foundation for nearly 20 years. International collaborations include work with Brazilian researchers to assess the evolution of calcium transport in the rain forest fauna. Dr. Wheatly has recently worked with engineers to use biologically inspired paradigms to design adaptive computer interfaces.

Dr. Wheatly also has established several externally funded educational initiatives since she was hired as chair of Biological Sciences at WSU in 1994. These are mainly targeted to increasing representation of women, minorities, and people with disabilities in science, technology,

engineering, and mathematics. One of her signature efforts is a large curriculum development grant titled Creating Laboratory Access for Students in Sciences (CLASS). The CLASS project has provided a curriculum and materials tailored to students with disabilities and includes a summer workshop for students and teachers. This program has evolved into a prominent national training program. In 1997, CLASS earned WSU's President's Award for Excellence—Outstanding Collaborative Unit.

Another program she developed in collaboration with Dr. David Goldstein, chair, Department of Biological Sciences, was the Undergraduate Mentoring in Environmental Biology program (UMEB). This NSF-sponsored grant supports research in environmental stress for undergraduates with disabilities and ethnic minorities.

In collaboration with Dr. Mariana Morris (principal investigator), she secured funding for an educational initiative in Brazil. The United States-Brazil Biotech Training Consortium (USABRIO) is an effort to promote scientific interchange between academic and biotechnology partners in Brazil and the United States. The consortium involves WSU, the University of Iowa, and Procter & Gamble in the United States, and the University of Sao Paulo, InCor Heart Institute, and Federal University of Rio Grande do Sul in Brazil. The purpose of the program is to train U.S. and Brazilian students in biotechnology with the aim of preparing them for careers in the global community of science.

Yes, we have to
divide up our time
like that, between
our politics and our
equations. But to me
our equations are far
more important, for
politics are only a
matter of present
concern. A mathe-
matical equation
stands forever.

—Albert Einstein



WRIGHT STATE
UNIVERSITY

Letter from the Dean

Dear Friends,

My first year as dean of the College of Science and Mathematics has been a time of personal and professional growth filled with opportunities and challenges.

Opportunities have included finding ways to provide our students with new and improved educational programs while enabling faculty to grow quality research programs in science and mathematics. In the pages that follow, you will learn more about the highlights of the past year.

The challenge has been shared with other state-assisted institutions of higher education. In a time of competing demands for state budget, the State of Ohio now contributes about 80 cents for every dollar of student tuition. It has become increas-

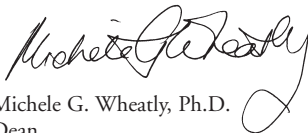
ingly important for us to identify external sources to invest in our college initiatives.

Please enjoy this first edition of the new College of Science and Mathematics newsletter.

In case you are wondering, *The Equation* was selected as a unifying theme across the various disciplines represented in our college. Hopefully, this information will serve to reconnect you with the college and leave you wondering how YOU can figure into the equation!



Very sincerely,


Michele G. Wheatly, Ph.D.
Dean

P.S.—The equation shown represents the multivariate normal distribution.

Who's New in the College Office?

- Dr. Robert Weisman, professor of biochemistry and molecular biology, served as interim dean of the college during the search for the new dean. He continues in the role of associate dean. Dr. Terry McKee, professor of mathematics and statistics, has served as the associate dean since 2001. Dr. McKee has served in many leadership capacities as the chair and as a member of many important college and university committees and task forces.

- Joyce Howes ('78 B.A.; '81 M.A.) continues to serve in the role of assistant dean for Student Services. Stacia Edwards and Michael Reynolds ('86 B.S.; '90 M.S.) were recently hired as assistant deans in the

CoSM. Stacia had worked for

WSU for many years in

the Department of

Psychology as the

assistant to the chair

and the director of Student Affairs.

Mike has remained

close to WSU; he served

on the Alumni Association's

Board of Directors for seven years

and he was president of the board for three years.

- Katie Mechlin, assistant professor of physiology and biophysics, is director of Premedical Programs, and Susan Yeoman ('00 B.A.) is student services coordinator. Karen Laycock, who graduated with her M.B.A. from WSU in December, is the business manager for the college. Beth Pierce ('00 B.A.) and Deborah Corcoran serve the college as the support staff.



HELP WHERE IT COUNTS!

The WSU STATISTICAL CONSULTING CENTER offers help for both on-campus researchers as well as external clients in the following areas: research/experimental design, sample survey methodology and design, sample size estimation, data entry, database construction and management, data analysis, interpretation of statistical results, statistical component of report/grant/manuscript writing, and presentations/seminars/workshops/short courses on specific statistical topics. For more information, call (937) 775-4205 or go to our website: www.math.wright.edu/ms/scc

New Biological Sciences Chair

David Goldstein, Ph.D., was selected to serve as interim chair of the Department of Biological Sciences when Michele

Wheatly stepped down to become dean. The department ran a comprehensive year-long search for a permanent chair; we are pleased

to let you know that Dr. Goldstein was chosen to be the new permanent chair.

Dr. Goldstein has been at the university since 1986.

His research centers on the comparative and ecological physiology of animals. In particular, he is interested in physiological responses to environmental stress, including the balance of salt and water, influence of diet composition, and effects of toxicants. The broad goal of these studies is to relate the physiological response of animals to conditions experienced in their natural environments. Much of his research has centered on birds.

Dr. Goldstein



Dr. Carmichael



Congressional Testimony

Wayne Carmichael, Ph.D., director of the Environmental Sciences Ph.D. program, testified before Congress on the subject of toxic cyanobacteria, commonly known as blue-green algae, and the threat that harmful algal blooms pose to Ohio waters. Dr. Carmichael has more than 30 years research experience in the area.

The New U and the New CoSM

Wright State University adopted the tag line The New U to help describe the essence of the University—new, vibrant, growing—a place that encourages individuals to maximize their potential success. The same can be said about the College of Science and Mathematics. This past year has seen change and growth in many ways. In addition to our new dean, Michele Wheatly, we've added many new faculty and staff. Our dean's office has grown beyond the boundaries of 134 Oelman into 106 Oelman where our Student Services office now resides.

With this newsletter and a recently launched internal newsletter, we are embarking on an improved communications campaign. Most of you have heard from the University and the Alumni Association but not from the College. We created this newsletter to keep you informed about the happenings in the college, but we want input from you as well. Let us know where you are and what you are doing! cosm@wright.edu

Science Matters!

Science with Sally

Sally Ride, the first American woman in space, brought her Science Festival to WSU in October, 2002. These festivals are held around the country to bring together middle school girls for a day of science experiences intended to increase their interest in science. The WSU event attracted over 700 girls! For more information, visit <http://www.sallyridefestivals.com/>

A New Generation at Work

On a sunny day in April, it might have appeared to an outsider that the University was being run by children. For the 11th year, WSU participated in the annual "Take Our Daughters and Sons to Work" day and the CoSM was an eager participant. Dean Michele Wheatly was the opening speaker for the event and several departments sponsored hands-on sessions for the children.

Tech Fest

The CoSM was a major contributor to Tech Fest 2003 which was held in February at Sinclair Community College. Young people and their families from all over

the State of Ohio participated in science and engineering activities during this three-day festival. The event was staffed by volunteers from a number of professional organizations, military organizations, businesses, colleges and universities.



Dr. Sally Ride

Nobel Laureate Speaks at Verandani Lecture

Nobel Laureate Phillip A. Sharp, Ph.D., founding director of the McGovern Institute for Brain Research and professor, Massachusetts Institute of

Technology, presented the Verandani Lecture on April 25. His talk was titled "RNA Biology: Splicing and Interference."

ACS President Visits WSU

The president of the American Chemical Society, Dr. Elsa Reichmanis, visited with students, faculty and staff at WSU in April 2003 and discussed the field of chemistry and the many opportunities that are available. Dr. Reichmanis is director of Polymer and Organic Materials Research for Bell Laboratories in New Jersey.



Dr. Elsa Reichmanis



Faculty and Staff Notes

Promotions

Associate to Full Professor

2002

Xiang-Dong Hou, Mathematics & Statistics

Jay Dean, Physiology & Biophysics

John Pearson, Anatomy

2003

Gary Nieder, Anatomy

Daniel Ketcha, Chemistry

Thomas Svobodny, Mathematics & Statistics

Thomas Skinner, Physics

Kevin Bennett, Psychology

Assistant to Associate Professor

2002

Valerie L. Shalin, Psychology

Dan Halm, Physiology & Biophysics

Weizhen Wang, Mathematics & Statistics

2003

Francisco Alvarez, Anatomy

Retirements

Dr. David Giron, Microbiology & Immunology (25 years)

Dr. Byron Kulander, Geological Sciences (24 years, 10 as Chair),

Dr. Edgar Rutter, Mathematics & Statistics (25 years, 20 as Chair)

Dr. Paul Servé, Chemistry (38 years, 6 as chair)

Dr. Paul Wolfe, Geological Sciences (37 years, 4 as Chair)

New Faculty Faces

Dr. Martin Gooden, assistant professor, psychology

B.S.—Howard University
M.S. & Ph.D.—The Ohio State University
His research interests involve understanding the social factors that facilitate or undermine academic performance, particularly among minority students.

Dr. Steven Higgins

assistant professor, chemistry
B.A.—Saint Olaf College
Ph.D.—University of Wisconsin-Madison
His current research projects focus on the study of interfacial chemical dynamics related to problems in environmental chemistry.

Dr. Douglas Petkie

assistant professor, physics
B.S.—Carnegie Mellon University
Ph.D.—The Ohio State University
His primary research interests involve laboratory spectroscopy of atmospheric and interstellar related molecules, and atmospheric physics and chemistry and laboratory astrophysics.

Dr. Michelle Reed

assistant professor, mathematics education
B.S.—Clarion University
M.S.—SUNY, Buffalo
Ph.D.—The Ohio State University
Her research interests are investigating children's mathematical processes in the early grades and helping teachers use this knowledge as they develop curriculum and teach.

Faculty Awards

The CoSM was very successful this year in garnering University Faculty Awards.

- Dr. Tim Wood, professor of biological sciences, received the Distinguished Professor of Teaching award.
- Dr. Jay Dean, professor of physiology & biophysics, was awarded Distinguished Professor of Research.
- Dr. Peter Lauf, professor of physiology & biophysics, was named a University Professor.
- Dr. Don Cipollini, assistant professor of biological sciences, received the Early Career Achievement Award.
- Dr. Qingbo Huang, assistant professor of mathematics and statistics, received the CoSM Teaching Award.

Outstanding Alumni

The CoSM has over 7,000 alumni serving in their fields as scientists, mathematicians, teachers and community leaders. We are proud to be able to highlight the accomplishments of two very special alumni.

John A. Hassoun, senior vice president for the Information and Space Sector at Veridian, received WSU's 2003 Outstanding Alumni Award from the CoSM. John graduated from WSU in 1983 and again in 1986. In 1996, Hassoun received Veda's highest leadership award, and three years later received the same award from the engineering division of Veridian. Through Hassoun's initiative, Veridian teamed with Wright State to bring the 12th International Symposium on Aviation Psychology to Dayton.



John Hassoun

Delores M. Etter, Ph.D., the recipient of WSU's 2002 Outstanding Alumni Award from the CoSM, was nominated in October by President Bush to serve as a member of the National



Delores Etter

Science Board. Dr. Etter, who earned both her bachelor's and master's degrees in mathematics at Wright State, is a professor of electrical engineering at the U.S. Naval Academy; prior to this position, she was deputy undersecretary of defense for Science and Technology.

Send your news to cosm@wright.edu so we can highlight you in a future issue.

Science knows no country, because knowledge belongs to humanity, and is the torch which illuminates the world. Science is the highest personification of the nation because that nation will remain the first which carries the furthest the works of thought and intelligence.

—Louis Pasteur

Research Spotlight

Among the state-supported universities in Ohio, WSU ranks third in federal research dollars received! The CoSM has averaged over \$5 million per year in externally funded research for the past five years. Funded research in the CoSM has increased by 72 percent over the past five years. The diversity of research topics funded within the college is truly amazing and reflects the diversity in programs and faculty expertise.

State Initiatives

Hayes Investment Fund Awards

WSU was successful in the most recent Hayes Investment Fund competition. WSU was the lead institution on two project awards; Dr. Gilpin captured the Consortium for Environmental and Process Technologies project, worth \$950,000, and Dr. Gilkey was awarded the Ohio Research in Advanced Internet Utilization, Simulation, and Telerobotics project, worth \$800,000.

Roger Gilpin, Ph.D., is Mead Distinguished Professor and executive director of Wright State's Brehm Research Laboratories. Dr. Gilkey is an associate professor of psychology.

WSU is a member of a multi-University group that was awarded \$2,000,000 for the Ohio NMR Consortium. Dr. William Feld, professor of chemistry, is the lead researcher on this project for WSU.

Biomedical Research and Technology Transfer Commission

WSU is a key member of a consortium that was recently awarded \$9 million from the Biomedical Research and Technology Transfer Commission to develop a comprehensive biomedical research and biotechnology center. Faculty in CoSM departments will be positively impacted by this significant grant. Consortium partners include WSU, University of Cincinnati Genome Research Institute, Children's Hospital Research Foundation in Cincinnati, Procter and Gamble Pharmaceuticals, Acero Inc., and Wright-Patterson Air Force Base.

"The collaborations that will be promoted by this award will allow the partnering institutions to address and solve critical

questions that would be beyond the capabilities of the individual partners," says Robert Fyffe, Ph.D., director of the center for brain research and associate dean for research affairs for the School of Medicine. "These efforts

will enhance genomic research and bioinformatics programs at Wright State and strengthen our ability to be competitive for other awards."



Dr. Fyffe

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Internationalizing the College

International Symposium on Cell Volume

Dr. Peter Lauf, University Professor and professor of physiology and biophysics, is hosting the International Cell Volume Symposium at WSU in September 2003. Sponsored in part by the National Institutes of Health, this symposium will feature talks by internationally acclaimed scientists from around the world. This symposium will showcase WSU for visitors from over a dozen countries. See <http://www.med.wright.edu/phys/cell/>



Haiti

During May, Hunt Brown (Department of Biological Sciences and Institute for Environmental Quality) spent five days in Haiti on a Seed Grant from the University Center for International Education to Internationalize the Curriculum. He looked at environmental problems and the social, economic and political forces that underlie them. Information from the trip will be included in a new general education course this fall: EH 205, Environmental Science and Society.

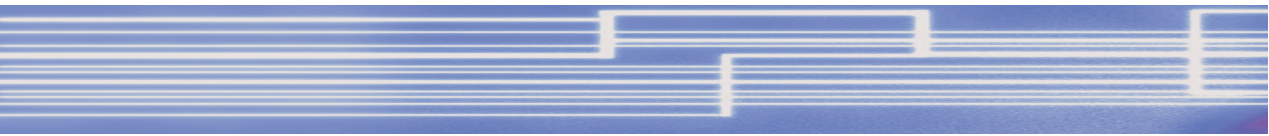


France

Joyce Howes, assistant dean, received a Language Development award from the University Studies Abroad Consortium, to study in Pau, France. Howes participated in a four-week program, studying French language, and also took a course titled "Contemporary French Politics."

International Symposium on Aviation Psychology

WSU sponsored the 12th International Symposium on Aviation Psychology, which was held at the Convention Center in Dayton, April 14 – 17, 2003. Dr. Tom Crouch, the senior curator of aeronautics at the National Air and Space Museum, Smithsonian Institute and one of the most highly respected historians on the Wright Brothers, gave the opening address to a group of researchers and scientists representing 24 different countries from all corners of the globe. After three days of lectures, poster sessions and discussions, the symposium's closing ceremony was held at a banquet at the U.S. Air Force Museum. Former astronaut Joe Allen, currently chairman of the board for Veridian, Inc., gave the address. The symposium was held in cooperation with Inventing Flight (Dayton); symposium co-sponsors included the Human Effectiveness Directorate of the Air Force Research Laboratory, Veridian, Inc., and NASA Ames. Other sponsors are the Association of Aviation Psychologists and The International Journal of Aviation Psychology.



Student Notes

Each year, a group of highly motivated juniors and seniors embark on an independent honors research project in their respective departments. These projects are supervised by a faculty member and require dedication and a mastery of their academic area. The following are honors graduates for 2003.

University Honors Scholars

Biological Sciences

Lisa E. Kelly
Rhya C. Lund

Chemistry

Kristina L. Weaver

Psychology

Courtney J. McElroy
Elizabeth K. Stevens
Heather R. Stewart
Tiffany Vassalle
Maria R. Williams

Departmental Honors Scholars

Chemistry

Heather J. Bentley
Matthew J. O'Malley

Psychology

Ian Bock
Michele L. Buffington
Alison M. Havlin

Physics

Troy B. Jones

General Studies Honors Scholars

Biological Sciences

Lori B. Healey
Brian S. Jenks
Amanda N. McConnell
Janette Rivera
Sara Scheckelhoff
Amy Ziegenbusch

Psychology

Brandi N. Alexander
Danielle E. Drieling
Elizabeth R. McCall
Joy L. Monaghan
Jessica Woolum

Exercise Biology

Anna E. Stryker



Chris Lyons— Presidential Scholarship

Annually, each college in the university selects one student to nominate for the Presidential Scholarship. The president then interviews each of these nominees and selects the recipient. We are excited to announce that the 2003 – 04 recipient is Chris Lyons. Chris is a clinical laboratory science major; he had a 4.0 GPA at the end of his junior year and he plans to go to medical school after graduating. “Doctors have the unique ability to use both science and service at the same time to benefit others,” he says.

Ryan Geyer— American Heart Association Fellowship

Ryan Geyer, a fourth-year biomedical sciences Ph.D. student, was recently notified that he will receive a pre-doctoral fellowship award from the American Heart Association to begin September 2003. The award's objective is to help students initiate careers in cardiovascular research by providing research assistance and training. Ryan's advisor is Dr. Lawrence Prochaska, professor, biochemistry and molecular biology. Last year the AHA funded 161 new and 98 continuing awards, totaling \$4,802,046; Ryan's award is \$18,000 per year for two years. These awards are presented to students who submit a research project proposal that is challenging and scientifically sound; the qualifications of both the student and the sponsor/advisor are considered as are the facilities and funding available for the student in the sponsor's lab.



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Community Outreach

Yellow School Buses EVERYWHERE!

When you see a yellow school bus on campus, there is a good chance that it is bringing area middle and high-school students to an outreach program sponsored by one of the departments in the CoSM.

Anatomy

Thousands of high-school science students have had the unique opportunity to explore anatomy on Wright State's campus. Since January, more than 900 students have come from 25 high schools to participate in this successful program.

Chemistry

“The chemistry demo show was awesome!” This is a common response from the thousands of middle-school students who are educated and entertained by Drs. Fortman and Battino each year. Many of the 6000+ students who attend this show during the winter break and spring break express a greater interest in science after experiencing the program.

Geology

Dedicated geological sciences students go into earth science classrooms and take geology to students who may not otherwise be exposed to this intriguing science. Undergraduate and graduate students have visited with more than 500 students at various schools in the Miami Valley over the past year.

Psychology

When the undergraduate students left in December, the Department of Psychology geared up for their Exploring Behavior Days. More than 200 students attended a morning of hands-on sessions exploring the scientific nature of the discipline of psychology as well as the variety of specialty areas and career options available to psychology majors. In targeting science and psychology classes, this program emphasizes the use of scientific method and the experimental nature of psychological research, an angle that the general population does not usually associate with the word psychology.

Corporate Partnerships

A special “thank you” is extended to our many corporate donors. In particular, we'd like to recognize the YSI Foundation, the philanthropic arm of YSI Incorporated (an employee-owned company with world headquarters in Yellow Springs, Ohio). They recently announced a three-year \$150,000 pledge to support several scholarships in the CoSM's Environmental Sciences Program and the YSI Endowed Scholarship in Environmental Sciences that will exist in perpetuity.

The WSU undergraduate program is a national leader among university environmental health sciences programs, and it is one of only 24 in the U.S. to be accredited. On May 15, WSU celebrated its newest acquisition, a Ph.D. program in environmental sciences, with a Symposium on Ecosystem Stressor Diagnostics. The new program, which accepted its first class of students in fall of 2002, is unique, bringing together a group of over two dozen faculty from the Departments of Biology, Chemistry, and Geology. The program focus is contaminant fate and effects with focus areas in environmental chemistry and toxicology, environmental stressors, and environmental geophysics and

hydrogeology. The YSI Foundation pledge toward scholarships provides both immediate and long-term benefits to both the undergraduate program and the emerging Ph.D. program.

YSI's corporate mission, summarized in the tag line “Who's Minding the Planet?,” compels the company to seek opportunities to support efforts toward ecological sustainability, including education and research. YSI Incorporated is a leading provider of technology solutions and services for data collection and analysis. YSI's water quality monitoring, life sciences, and temperature instruments provide customers with data integrity, a critical component in building an ecologically sustainable habitat.

Susan Miller, YSI Foundation trustee, commented, “Because of our strong interest in the environment, we are very pleased to support the quality educational efforts of Wright State's new Environmental Sciences Ph.D. program. This is a great fit.” The donation represents one of the largest contributions from the Foundation.

If your corporation has interest in an educational partnership, please contact us.



Σ^3 —Special Σ cience Σ upporters!

The Σ total of your donations makes a huge difference for the CoSM. The list of individuals who support our mission continues to grow and we sincerely THANK YOU! Over the past year, nearly 400 individuals and corporations supported the CoSM with generous donations.

How Can You Help Us?

Time: Responding to alumni surveys; listening and responding to the student callers when they contact you for the Tomorrow Takes Flight Capital Campaign.

Talent: Serving on advisory boards; facilitating student placement for internships and jobs.

Treasure: Initiating equipment donations from your employer; donating funds to the program of your choice.

For more information on the various ways you can support the CoSM, please visit the WSU Foundation website at <http://wsufoundation.wright.edu/>



Many of you responded generously with a pledge this May when student callers from the University Office of Development called friends and alumni from the CoSM as part of their yearly telephone campaign for the Annual Fund. Some of these gifts have already been awarded as scholarships for students to use in the next academic year. Later this summer, you will hear those now-familiar student callers on the telephone again in conjunction with the Tomorrow Takes Flight Capital Campaign. Please consider a gift to the CoSM program or scholarship of your choice as part of this campaign.

CoSM Alumni Events

Watch for an invitation to lunch with the dean! These events have proven to be a wonderful opportunity to get acquainted, to reconnect with faculty, and to re-establish or establish relationships with others from the same field. So far, we've held two luncheons, one with chemistry and one with physics. Your invitation may be coming soon. Watch for biological sciences in September, psychology in October, and mathematics and statistics in November.

Further, when the dean or associate/assistant deans travel, they try to arrange meetings with alumni at their destination. We have had rewarding visits in San Francisco and Washington, D.C. in the recent past. So, even if you left the Miami Valley, WE may visit YOU!

Wright State University College of Science and Mathematics

Dean—Dr. Michele Wheatly

Associate Deans—Dr. Terry McKee and Dr. Robert Weisman

Assistant Deans—Joyce Howes, Stacia Edwards, Michael Reynolds

Key Contacts.....please add "937-775-" to all numbers

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Biochemistry and Molecular BiologyDaniel Organisciak3041

Biological SciencesDavid L. Goldstein2655

Biomedical Sciences Ph.D. ProgramGerald Alter	2504
ChemistryPaul Seybold	2855
Env. Sciences Ph.D. ProgramWayne Carmichael	3273
Geological Sciences.....Cindy Carney	2990
Institute for Environmental Quality	G. Allen Burton2201
Mathematics and Statistics	Manley Perkel2785
Microbiology and Immunology Graduate Program	Larry Arlian2568
Physics	Gust Bambakidis.....2954
Psychology	Wayne Shebilske2391

Website: www.wright.edu/cosm/